

Physics 12HL Outline

Instructor: Mr. Klaassen aklaassen@vsb.bc.ca

Website: <http://physics-pages.wikispaces.com/>

Classroom Text: [Physics, Principles with Applications](#), third edition, Douglas C. Giancoli

Reference Text: [Hecht, Physics:Algebra/Trig edition](#)

[Physics 12 Student Laboratory Manual](#), Ron Somers

Topic (<i>italics is HL</i>)	Giancoli	Hecht	Lab Manual
Introduction/Review	Chapters 1	Ch 1	
What is Physics?	p1-6		
Scientific Measurement and SHM	p7-12, p274-285		Oscillating Spring Planning
Kinematics in 2 Dimensions	Chapters 2 and 3	Ch 2-3	
Velocity, time and acceleration	p16-34		
Vectors	p43-52		Investigation 3
Projectiles	53-59		Investigation 1
Dynamics in 2 Dimensions	Chapter 4	Ch 4	
Newton's Laws	p65-72		
Vector Forces	p74-89		Block on Slope
Circular Motion and Gravitation	Chapter 5	Ch 5	
Circular Motion	p97-100		Flying Pig Lab
History of astronomy	Kirk p109-112		
Gravitation and <i>logs</i>	p106-114		Investigation 6
Gravitational Energy	Not in Text		
Work and Energy	Chapter 6	Ch 6	
2-D Work	p124-128		
Forms of Energy	p129-134		
Conservation of Energy	p135-140		Energy Planning
Power	p141,142		
Momentum	Chapter 7	Ch 7	
Newton's Second Law Revisited	p149-155		
Conservation of Momentum	p156-160		Investigation 2
Centre of Mass	p161-166		
Electrostatics	Chapters 16 and 17	Ch 15-16	
Electric Charge	p416-419		

Coulomb's Law	p420-430		Investigation 7
Electric Potential (Voltage)	p440-443		Investigation 8
Point Charge	p445-446		
<u>Capacitance</u>	<u>P449-452(basics)</u>		
<u>Charging and discharging capacitor</u>	<u>Study guide</u>		
Electric Currents	Chapters 18 and 19	Ch 17-18	
Battery and Current	p459-462		
Ohm's Law and Potential Dividers	p463-467		<i>Resistivity Planning</i>
Electric Power	P468-470		
<u>Alternating Current, AC</u>	<u>p471-472</u>		
Kichoff's Rules	485-488		
Resistors	480-483		Investigation 9
Terminal Voltage	p483-484		
Electromagnetism	Chapters 20 and 21	Ch 19-21	
Magnetic Fields	p505-506		
Magnetism is Caused by Moving Charge	p507-510		
Magnetic Force	p511-514		Investigation 10
Applications	p516-523		
Ampere's Law	P524-527		Investigation 11
<u>Induction</u>	<u>p538-543</u>		
<u>Back Emf</u>	<u>p546</u>		<u>Investigation 13</u>
<u>Transformers (AC)</u>	<u>p547-549</u>		
<u>Diodes and rectification (AC)</u>	<u>788-796</u>		
Environmental Physics	study guide	study guide	
Energy degradation			
Energy sources			
Greenhouse effect			

Term marks will be awarded as follows: up to 10% for informal demonstrations of physics knowledge and attitudes(participation) and homework/binder checks, up to 25% for laboratory reports, up to 10% for quizzes and up to 65% for tests. Copying or letting another student copy tests or laboratory work will result in a 0 on that paper and a meeting between parents and the administration. This includes copying data from your lab partner; you must copy down your own data as it is collected. Late assignments will be assessed a 20% penalty per class.

Final IB Mark = Internal Assessment/IB exam 20%/80%

The Internal Assessment is a 6-12 page individual investigation involving research, data collection and analysis.

IB predicted/anticipated marks will be assigned using the term marks and the mock exam.

I am available for assistance every day after school or at other times by appointment.

Expectations:

Students must attend and fully participate in all classes. When absent, a signed note from a parent or guardian is required. Students missing tests or quizzes will receive a 0 unless a note is given. Late students will stay after class.

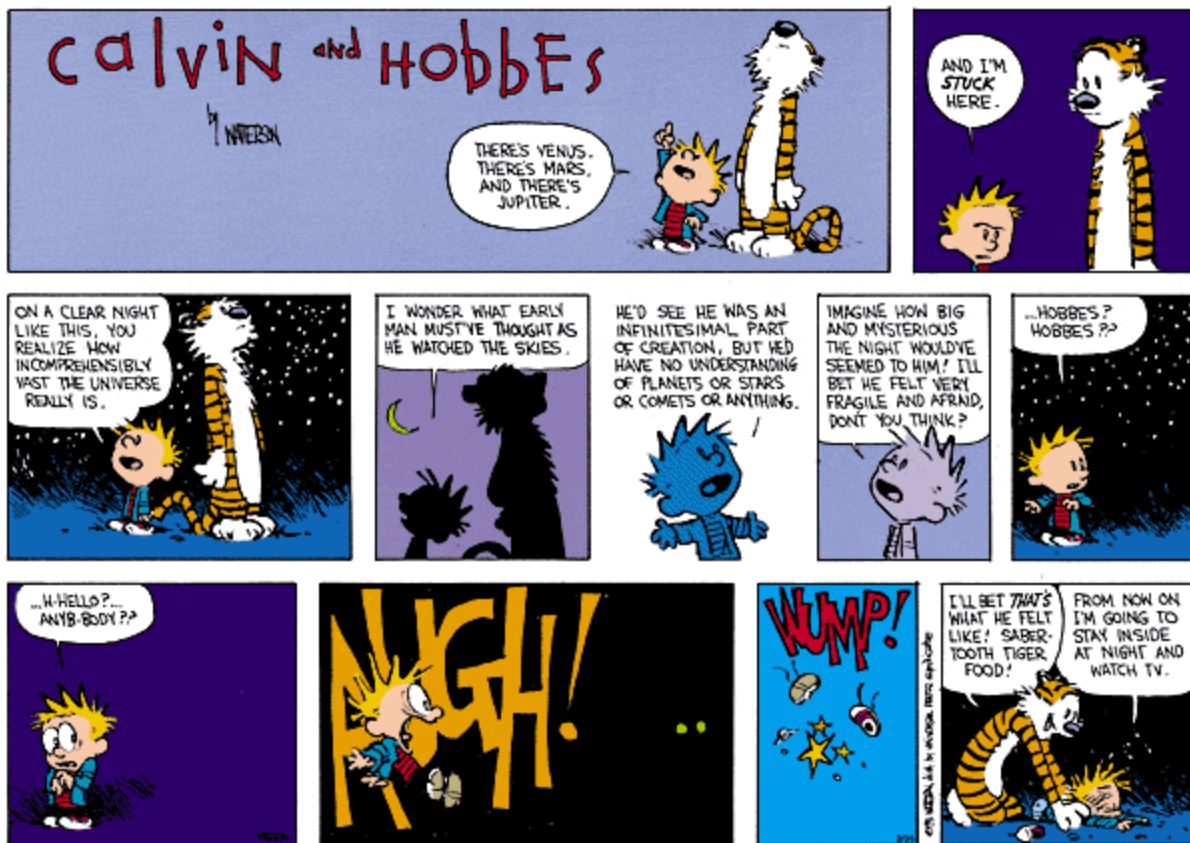
Have a one inch binder for physics and keep it organized. This handout should be at the front and all homework and notes should be kept in order with page numbers listed for binder checks.

Students are expected to bring their own text and supply a sturdy cover, their lab manual, a three ring binder, a large supply of paper, a scientific calculator, and graph paper. Students who have difficulties carrying their books to class can join me in the weight room after school for strengthening exercises.

Students interested in peer tutoring, being tutored by peers, or working on enrichment should talk to me after class or after school. Being a tutor can give you service hours, help you deepen your understanding and is fun.

Always complete homework the night it is assigned. Come to my room right at 3:03 with homework problems the next day so you will be ready for the homework check the day after. For this system to work, you must do homework the day it is assigned.

To help students help each other and to send reminders, I have a web page (<http://physics-pages.wikispaces.com/>) join code RNKKNNC or a work [facebook page](#). Feel free to post questions as I will try to check it daily and will also give credit to students who help others. Do not leave questions to the last minute, as you may not receive an immediate response. Students who help others in class and through posts will be awarded participation marks.



(Watterson, Bill <http://www.ucomics.com/calvinandhobbes/index.phtml>)



(Amend, Bill <http://www.ucomics.com/foxtrot>)